REMARKS

Claims 1-11, 39, 40, 42, 86, 87, 118, 148, 181, 212 and 237-263 are pending in the application. Claims 3, 42, 86, 87, 118, 181, 212, 258, 259, and 261-263 are withdrawn. Claims 1, 10, and 39 are currently amended. Claims 3, 5-7, 42, 86, 148, 212, 248, 249, 252, 253, and 258-263 are canceled without prejudice or disclaimer. Claims 264-278 are added. Accordingly, claims 1, 2, 4, 8-11, 39, 40, 87, 118, 181, 237-246, 249-251, 254-257, and 264-278 will be pending in the application upon entry of the amendments presented herein.

Support for the claim amendments and additions can be found throughout the specification and claims as originally filed. No new matter has been added.

In particular, support for the amendment to claim 1 can be found at least, for example, at paragraphs [0021], [0056], [0057], [0078], and [0080] of the specification as published.

Support for the amendment to claim 10 and paragraphs [0025] and [0060] of the specification as published, which address the use of trademarks in claim 10 and state the well-known goods associated with the recited trademarks in the specification, are implicit. In particular, one or ordinary skill in the art would have readily appreciated that the HASTELLOY[1] trademark is used in connection with "metal alloys" and that the TEFLON trademark is used in connection with "synthetic resinous fluorine-containing polymers." This understanding is evidenced, in part, by goods listed in corresponding U.S. Trademark Registration No. 269,898 for HASTELLOY and U.S. Trademark Registration No. 418,698 for TEFLON as well as Appendix I of the Manual of Patent Examining Procedure, which lists the goods associated with the TEFLON trademark. Copies of U.S. Trademark Registration Nos. 269,898 for HASTELLOY, U.S. Trademark Registration No. 418,698 for TEFLON, and Appendix I of the Manual of Patent Examining Procedure are attached as Appendix A.

Support for the amendment to claim 39 can be found at least, for example, at paragraphs [0056] and [0057] of the specification as published.

[1] Applicants respectfully note that the HASTELLOY trademark was misspelled in the application as Hastaloy. Applicants respectfully assert that one or ordinary skill in the art would have readily

Support for new claim 264 can be found at least, for example, at paragraphs [0056] and [0057] of the specification as published.

Support for new claims 254-268 can be found at least, for example, in original claims 27, 28, 78, and 79.

Support for new claims 269-272 can be found at least, for example, in original claims 1, 40, 87, 181 and paragraphs [0021], [0056], [0057], [0078], and [0080] of the specification as published.

Support for new claims 273-276 can be found at least, for example, in original claims 40, 87, 181 and paragraphs [0056] and [0057] of the specification as published.

Support for new claims 277 and 278 can be found at least, for example, in original claims 245 and 246 of the specification as published.

Election of Restriction Group and Species

Applicants maintain independent method claims 87, 118, and 181 and add new independent method claims 269, 271, 273, and 275 pursuant to M.P.E.P. § 821.04(b), which states:

> Process claims which depend from or otherwise require all the limitations of the patentable product will be entered as a matter of right if the amendment is presented prior to final rejection or allowance, whichever is earlier.

Applicants provide the following table summarizing the correspondence between each pair of system and method claims for the Examiner's convenience.

System Claim	Corresponding Method Claim(s)
1	269 & 271
39	87, 118, & 181
40	273 & 275

Accordingly, Applicants respectfully request rejoinder of method claims 87, 118, 181, 269, 271, 273, and/or 275 and the claims depending therefrom upon allowance of claims 1, 39, and/or 40, respectively.

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appreciated that this misspelling was an obvious error and that Applicants intended to recite the HASTELLOY trademark.

35 U.S.C. § 112

The Office Action rejects claims 1, 2, 4-11, 39, 40, 237-257, and 260 under 35 U.S.C. § 112, ¶ 2 as "indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention."

Claim 1

The Office Action rejects claim 1 for the use of (i) "the frit has a density of at least 50%" and (ii) "secondary particles."

Regarding the recited density, Applicants currently amend independent claim 1 to recite that "the frit has a density of at least 50% by volume."

Regarding "secondary particles," Applicants respectfully assert that this term is defined broadly to encompass any particle introduced into the void spaces of the porous support. In this regard, Applicants respectfully invite the Examiner's attention to MPEP § 2173.04, which states that "breadth of a claim is not to be equated with indefiniteness."

Claim 10

The Office Action rejects claim 10 because "Hastaloy™ and Teflon™ are trademarks."

Applicants currently amend claim 10 to remove Hastaloy™from the Markush grouping and to replace Teflon™ with the well-known goods associated therewith.

Claim 39

Claim 39 is rejected due to the phrase "wherein the frit is oriented with respect to a flow direction through the tubular chamber," which the Office Action alleges contradicts the intended use nature of the preamble.

Applicants currently amend claim 39 remove this language.

Claim 40

Claim 40 is rejected due to the phrase "secondary particles."

As discussed above in the context of claim 1, Applicants respectfully assert that the term "secondary particles" is defined broadly to encompass any particle introduced into the void spaces of the porous support. In this regard, Applicants respectfully invite the Examiner's attention to MPEP § 2173.04, which states that "breadth of a claim is not to be equated with indefiniteness."

Claims 238-240, 245 and 246

The Office Action rejects claims 238-240, 245 and 246 for inclusion of the term "grade media."

As a preliminary matter, Applicants respectfully note that claims 238-240, 245, and 246 recite "media grade" as opposed to "grade media."

Applicants further respectfully assert that the term "media grade" is well-understood by those of ordinary skill in the art. Specifically, porous support structures having the recited media grades are commercially available from suppliers such as Mott Corporation of Farmington, Connecticut. A brochure from Mott Corporation providing permeability information for various media grades is attached as Appendix B.

Claims 247, 248, 252, and 253

The Office Action rejects claims 247, 248, 252, and 253 for referring to the composition of the packing material.

Applicants cancel claims 247, 248, 252, and 253 and add new claims 265-268, which correspond to canceled claims 247, 248, 252, and 253, but depend directly or indirectly from claim 254 in a similar manner as claim 256, which the Office Action deemed to be compliant with 35 U.S.C. § 112.

Claim 260

The Office Action rejects claim 260 as not adding structure.

Claim 260 is canceled, thereby rendering this rejection moot.

In view of these amendments and remarks, Applicants respectfully request the withdrawal of the rejection of claims 1, 2, 4-11, 39, 40, 237-257, and 260 under 35 U.S.C. § 112, ¶ 2.

35 U.S.C. § 103(a)

The Office Action rejects claims 1, 2, 4-11, 39, 40, 237-257, and 260 under 35 U.S.C. § 103(a) over U.S. Patent No. 4,399,032 to Mott (hereinafter "Mott") in view of

Japanese Patent Application Publication No. 2004-177180 of Tajima et al. (hereinafter "Tajima") as translated by the Office.[2] Applicants respectfully traverse this rejection.

Claims 1, 2, 4-11, 39, 237-257, and 260

Currently amended independent claims 1 and 39 recite a frit having a porous support structure having a plurality of void spaces filled with a plurality of secondary particles "wherein the secondary particles within the porous support structure are sintered to each other, to the porous support structure surrounding the void spaces, or both."

In contrast to Mott's teaching of the use of a "unitary one piece sintered metal frit of flat disc like configuration" as a terminator element 38 (Mott, col. 4, lines 15-16) and Tajima's teaching of packing grains inside the pores of a porous filter (Tajima, ¶ [0014]), the claimed invention provides frits having secondary particles sintered within a porous support structure.

Sintering within the porous support structure, as recited by Applicants, is advantageous for several reasons. First, sintering promotes retention of the secondary particles within the porous support structure. Second, sintering bonds the secondary particles to each other, to the porous support structure, or both, thereby creating a secondary pore network within the porous support structure.

Moreover, sintering within a porous support structure is a counterintuitive step. One of ordinary skill in the art would predict that heating the assembled porous support structure and secondary particles would result in substantial deformation of the porous support structure. However, as Applicants discuss in paragraph [0057] of the specification as published, "Because of the high surface area afforded by the much smaller secondary particles, during the secondary sintering step, the secondary particles will soften at a lower temperature than the coarser porous support structure, so that the size and shape of the porous support structure remains substantially unchanged."

[2] In order avoid delays in prosecuting this application, Applicants have not obtained an independent translation of Tajima. Applicants reserve the right to do so in the future and to assert that the Office's translation is ambiguous and/or inaccurate.

Claim 40

Claim 40 recites a frit including a porous support structure having a plurality of void spaces filled with a plurality of secondary parties "to a depth greater than about 10 microns."

As tacitly acknowledged by the Office Action's silence regarding this feature, neither Mott nor Tajima teach or suggest a porous support structure having a plurality of void spaces filled with a plurality of secondary parties "to a depth greater than about 10 microns" as recited by Applicants.

Accordingly, Applicants respectfully request the withdrawal of the rejection of claims 1, 2, 4-11, 39, 40, 237-257, and 260 under 35 U.S.C. § 103(a) over Mott in view of Tajima.

The Office Action rejects claim 237 under 35 U.S.C. § 103(a) over Mott in view of Tajima and in further view of U.S. Patent No. 4,719,011 to Shalon et al. (hereinafter "Shalon"). Applicants respectfully traverse this rejection.

Claim 237 depends from currently amended claim 1, which recites a frit having a porous support structure having a plurality of void spaces filled with a plurality of secondary particles such that the frit has a density of at least 50% by volume "wherein the secondary particles are sintered within the porous support structure to each other, to the porous support structure surrounding the void spaces, or both."

As discussed herein, in contrast to Mott's teaching of the use of a "unitary one piece sintered metal frit of flat disc like configuration" as a terminator element 38 (Mott, col. 4, lines 15-16) and Tajima's teaching of packing grains inside the pores of a porous filter (Tajima, ¶ [0014]), the claimed invention provides frit having secondary particles sintered within a porous support structure.

Shalon, which discloses module high pressure liquid chromatography columns, fails to teach or suggest sintering within the porous support structure as recited by Applicants. Thus, Shalon does not remedy the deficiencies of Mott and/or Tajima.

Accordingly, Applicants respectfully request the withdrawal of the rejection of claim 237 under 35 U.S.C. § 103(a) over Mott in view of Tajima and in further view of Shalon.

Conclusion

In view of the foregoing, Applicants respectfully request entry of the amendments and remarks presented herein, reconsideration and withdrawal of all rejections and allowance of the application with claims 1, 2, 4, 8-11, 39, 40, 237-246, 249-251, 254-257, and 264-276 and rejoinder of claims 87, 118, 181 and the claims depending from claims 1 and 142.

If a telephone conversation with Applicants' representatives would be helpful to resolve any further issues regarding the restriction requirement and/or expedite further prosecution of the application, Applicants invite the Examiner to contact the undersigned at the telephone number listed below.

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Respectfully submitted,

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